

DOCUMENT RESUME

ED 057 804

LI 003 293

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TITLE Reading List in Classification Theory.
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of Library Science.
PUB DATE [70]
NOTE 37p.; (180 References)
EDRS PRICE MF-\$0.65 HC-\$3.29
DESCRIPTORS Bibliographies; *Classification; *Library Research;
*Library Technical Processes

ABSTRACT

The reading list contains 180 references and serves as an introduction to classification research literature. While the list includes major viewpoints on basic work in the field of classification as well as related areas, it excludes critical literature. The major divisions of the reading list are: (1) Definition: What is Classification, (2) Bibliographic Classification, (3) Types of Non-Bibliographic Classification, (4) Recent Views of Classification, (5) Subjects Related to Classification, and (6) Miscellaneous Background Material. (MM)

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READING LIST IN CLASSIFICATION THEORY ,

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LI 003 293

ACKNOWLEDGEMENT

I am grateful to Ruth M. Harper, who typed this list,
for working diligently to keep the text in order and
for making many helpful suggestions in the process.

This reading list is designed to serve as an introduction to classification research literature, covering basic work in the field itself and in several related areas. The major viewpoints are presented. It is hoped that the reader will be encouraged to plunge in with original ideas of his own. To avoid distraction by discussion of variant fine points and philosophies, much of the critical literature about classification has been omitted. This can easily be picked up by consulting the appropriate sections of the major abstracting journals in library and information science. The field is wide open to new approaches and, in particular, to new methods for organization and description of the universe of knowledge. So much interest has been shown in classification during the last decade that it seems very unlikely that the two most recent great systematizers, Bliss and Ranganathan, have said the last word for the twentieth century in this field.

OUTLINE

I. Definition; what is classification?

- A. Classification as description
- B. Classification as division
- C. Classification as hypothesis
- D. Classification as scientific method
- E. Classification as a convenient ordering device
- F. Classification as coordination or grouping
- G. Classification as folk taxonomy
- H. Classification as an umbrella
- I. Classification as a structure
- J. Classification as systematic concept coordination
- K. Classification as a common sense arrangement

II. Bibliographic classification

- A. General
- B. Kinds of systems
 - i. Universal classification systems (summary)
 - ii. Enumerative systems
 - a) Dewey Decimal Classification
 - b) Universal Decimal Classification
 - c) Library of Congress Classification
 - d) Bibliographical Classification
 - iii. Faceted classifications
 - a) Colon (summary)

b) Classification Research Group types

1. General
2. Specific
3. Later
4. Bibliography

c) Faceted other than Classification Research

Group types

iv. Other

III. Types of non-bibliographic classification

IV. Recent views of classification

- A. Criticism and goals
- B. Purpose and method
- C. Eclecticism: some ideas adopted by various classificationists
 - i. Integrative levels
 - ii. General systems theory
 - iii. Other
- D. Toward a philosophy of classification

V. Subjects related to classification

- A. Notation
- B. Linguistic approaches: terminology, language, linguistics, content analysis, stylistics
- C. The subject approach, including latent structure in indexing
 - i. Subject headings, descriptors, index terms
 - ii. Thesauri

- D. The classified catalog
- E. Automatic indexing and classification
- F. Automation of classification procedures and results
 - i. Input (as part of cataloging automation)
 - ii. Input/output (as a system of subject analysis)

VI. Miscellaneous background material

- A. Scientific method, philosophy
- B. Information science, née documentation
- C. Cataloging codes
- D. Logic
- E. Statistical methods
- F. System analysis
- G. Communication theory, symbolism
- H. Evaluation
- I. Computers and computer programming
- J. Surveys, the future
- K. Library automation

Abbreviations

- (1) Amer. Doc. American Documentation (as of January 1970, Journal of the American Society for Information Science).
- (2) Dorking papers Proceedings of the International Study Conference on Classification for Information Retrieval held at Beatrice Webb House, Dorking, England, 13th-17th May, 1957 (London, ASLIB, 1957).
- (3) Elsinore papers Classification research; proceedings of the Second International Study Conference held at Hotel Prins Hamlet, Elsinore, Denmark, 14th to 18th September 1964. Pauline Atherton, ed. (Copenhagen, Munkegaard, 1965).
- (4) ICSI Proc. Proceedings of the International Conference on Scientific Information, Washington, D.C., November 16-21, 1958 (Washington, National Academy of Sciences/National Research Council, 1959).
- (5) JASIS Journal of the American Society for Information Science.
- (6) J. Doc. Journal of Documentation.

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|---|--|
| <p>(7) The use of the Library of Congress Classification; Proceedings of the Institute...1966</p> | <p><u>The use of the Library of Congress Classification; Proceedings of the Institute on the Library of Congress Classification. Sponsored by the American Library Association, Resources and Technical Services Division, Cataloging and Classification Section.</u> Richard H. Schimmelpfeng and C. Donald Cook, eds. (Chicago, American Library Association, 1968).</p> |
| <p>(8) Lib. J.</p> | <p><u>Library Journal.</u></p> |
| <p>(9) Lib. Quart.</p> | <p><u>Library Quarterly.</u></p> |
| <p>(10) LRTS</p> | <p><u>Library Resources and Technical Services.</u></p> |
| <p>(11) Proceedings of the FID Congress 1965</p> | <p>International Federation for Documentation. <u>Proceedings of the 1965 Congress: 31st meeting and congress, Washington, D.C., U.S.A., October 7-16, 1965, in cooperation with the American Documentation Institute</u> (Washington, Spartan Books, 1966), Vol. II.</p> |

I. Definition: what is classification?

A. Classification as description

Chapman, Frank Miller and Paul Henle. The fundamentals of logic (N.Y., Scribners, 1933), pp. 282-290.

B. Classification as division

Evans, D. Luther and Walter S. Gamertsfelder. Logic, theoretical and applied (N.Y., Doubleday, 1937), pp. 131-139.

C. Classification as hypothesis

Copi, Irving M. Introduction to logic (N.Y., Macmillan, 1953), pp. 425-431.

D. Classification as scientific method

"Classification" (by A. Wolf) Encyclopedia britannica, 14th ed.

E. Classification as a convenient ordering device

Burt, Edwin Arthur. Right thinking (N.Y., Harpers, 1946), pp. 418-420.

F. Classification as coordination or grouping

Frye, Albert Myrton. Rational belief, an introduction to logic (N.Y., Harcourt, Brace, 1941), pp. 353-358.

G. Classification as folk taxonomy

Berlin, Brent, Dennis E. Breedlove and Peter H. Raven. "Folk taxonomies and biological classification," Science, v.154 (14 Oct. 1966), pp. 273-275.

H. Classification as an umbrella

"Conclusions and recommendations", Elsinore papers, p. 544n.

I. Classification as a structure

Richmond, Phyllis A. "Transformation and organization of information content: aspects of recent research in the art and science of classification," Proceedings of the FID Congress 1965, pp. 87-106.

J. Classification as systematic concept coordination

Foskett, D. J. "Classification and indexing in the social sciences, ASLIB Proceedings, v.22, no. 3 (March 1970), pp. 90-101.

Austin, Derek. "Prospects for a new general classification," Journal of Librarianship, v.1, no. 3 (July 1969), pp. 149-169.

_____ "Development of a new general classification: a progress report," The Information Scientist, v.3, no. 3 (Nov. 1969), pp. 95-115.

K. Classification as a common sense arrangement

Line, Maurice B. and Philip Bryant. "How golden is your retriever? Thoughts on library classification," Library Association Record, v.71, no. 5 (May 1969), pp. 135-138.

II. Bibliographic classification

A. General

Shera, Jesse H. "Classification as the basis of bibliographic organization," University of Chicago Graduate Library School.

Bibliographic organization (Chicago, University of Chicago Press, 1951), pp. 72-93. Also in Shera, Jesse H.

Libraries and the organization of knowledge, ed. D. J.

Foskett (Hamden, Conn., Archon Books, 1965).

Bliss, Henry Evelyn. A bibliographic classification extended by systematic auxiliary schedules for composite specification and notation. 2d ed. (N.Y., H.W. Wilson, 1952), v.1, pp. 2-20.

Brief outline of principles. For a much fuller discussion, see his works: The organization of knowledge and the system of the sciences (New York, Holt, 1929), and The organization of knowledge in libraries and the subject approach to books (N.Y., H.W. Wilson, 1939).

Sayers, W. C. Berwick. A manual of classification for librarians, 4th ed. (London, Andre Deutsch/A Grafton Book, 1967), first leaf and pp. 7-15, 25-42, 96-102, 369-380.

Commentary that has stood the test of time.

Ranganathan, S. R. Elements of library classification, 3d ed. (Bombay, Asia Publishing House, 1962).

Medium difficulty.

_____ Prolegomena to library classification, 2d ed. (London, Library Association, 1957).

Advanced. There is a third edition, but this one is satisfactory.

Mills, Jack. "Progress in documentation: library classification," J. Doc., v.26, no. 2 (June 1970), pp. 120-160.

A very significant summary of the current situation with an excellent bibliography.

B. Kinds of Systems

i. Universal classification systems (summary)

Sayers, W. C. Berwick. Manual of classification,
4th ed., pp. 151-246.

Dewey, Brown, UDC, LC, Bliss, Colon described,
fold out tables. Consult full schedules if the
systems are not already familiar.

ii. Enumerative systems

a) Dewey Decimal Classification

The Dewey Decimal Classification; outlines and papers
presented at a workshop on the teaching of clas-
sification, December 8-10, 1966. Maurice F. Tauber,
Carlyle J. Frarey, Nathalie C. Batts, eds. (New
York, Columbia University, School of Library
Service, 1968).

The basics in considerable detail.

b) Universal Decimal Classification

Guide to the Universal Decimal Classification (UDC).

B.S. 1000C:1963 (F.I.D. No. 345) (London, British
Standards Institution, 1963).

Short, clear.

Mills, Jack. The Universal Decimal Classification

(New Brunswick, N. J., Rutgers University. Graduate
School of Library Science, 1964) (Rutgers Series on

Systems for the Intellectual Organization of Information, v.1).

Detailed discussion with many examples.

Grolier, Eric de. A study of general categories applicable to classification and coding in documentation (Paris, UNESCO, 1962), pp. 18-42.
An excellent survey.

c) Library of Congress Classification

Immroth, John Philip. A guide to the Library of Congress Classification (Rochester, N.Y., Libraries Unlimited, 1968).
A survey for beginners.

The Use of the Library of Congress Classification; Proceedings of the Institute...1966.
Detailed consideration of some of the more difficult aspects of this system. No manual or monograph as yet covers the LC system in sufficient detail for practitioners or for advanced teaching.

d) Bibliographical Classification

Bliss, Henry Evelyn. A bibliographical classification, extended by systematic auxiliary schedules for composite specification and notation (New York, H.W. Wilson, 1952-53), 4v, 1st vol. is in its 2d ed.
Result of a life's work and based on theory worked out over several decades. of. pp. 2-179.

iii. Faceted classifications

a) Colon (summary)

Ranganathan, S. R. The Colon classification (New Brunswick, N. J., Rutgers University. Graduate School of Library Service, 1965) (Rutgers Series on Systems for the Intellectual Organization of Information, vol. 4).

One of the clearest explanations made by this master.

Palmer, Bernard I. and A. J. Wells, The fundamentals of library classification (London, Allen & Unwin, 1951).

An early but easy-to-comprehend introduction to the principles of faceting.

Sayers, Manual of classification, 4th ed., pp. 228-246.

Brief but succinct.

Atherton, Pauline. "Ranganathan's classification ideas: an analytico-synthetic discussion," LRTS, v.9, no. 4 (fall 1965), pp. 462-473.

Basic ideas.

SCHEDULES in Ranganathan, S. R. Colon Classification, 6th ed. (New York, Asia Publishing House, 1960).

The 5th ed. is essentially the same. A 7th is in progress as this list is being compiled. It will have major changes in classes.

Batty, C. D. An introduction to Colon Classification (London, Archon Books & Clive Bingley, 1967).

A programmed text for self-instruction.

b) Classification Research Group types

1. General

Vickery, Brian C. Classification and indexing in science, 2d ed. (London, Butterworths Scientific Publications, 1959).

Foskett, Douglas J. Classification and indexing in the social sciences (Washington, Butterworths, 1963).

Significant works in their respective areas.

Vickery, B. C. Faceted classification (London, ASLIB, 1960) (new impression with minor additions, 1968).

How to.

2. Specific

Early examples.

Foskett, D. J., "Occupational safety and health documents classification scheme," Dorking papers, pp. 115-136.

_____ "The construction of a faceted classification for a special subject," ICSI Proc., v.2, pp. 867-888.

English Electric; a faceted classification for engineering, 3d ed. Jean Binns and David Bagley, comp. and ed. (Whetstone/Rugby, English Electric Co., Ltd, 1961).

This has been replaced by a completely revised system called Thesaurofacet.

3. Later

Classification Research Group. A classification of library science. Preliminary draft edition (London, ASLIB, 1965), 421.

This scheme is still in the process of development.

Broxie, P. F. "Faceted classification and the fine arts," J. Doc., v.22, no. 1 (Mar. 1966), pp. 40-54.

Classification Research Group. Classification and information control. Papers representing the work of the Classification Research Group during 1960-68 (London, Library Association, 1969) (Library Association Research Publication No. 1).

Foskett, D. J. Classification for a general index language. A review of recent research by the Classification Research Group (London, Library Association, 1970) (Library Association Research Publication No. 2).

Explanation of basic contents of No. 1.

4. Bibliography

Library Association Record, v. 55 (June 1953), pp. 187-188.

"The need for a faceted classification as the basis of all methods of information retrieval," Lib. Assn. Record, v. 57 (1955), pp. 262-268.

"Bibliography of papers on classification and allied subjects," J. Doc., v. 12, no. 4 (Dec. 1956), pp. 227-230.

"Classification Research Group Bulletin no. 4,"

J. Doc., v. 14, no. 3 (Sept. 1958), pp. 136-143.

The first three bulletins were in processed form.

"Classification Research Group Bulletin no. 5,"

J. Doc., v. 15, no. 1 (March 1959), pp. 39-57.

"Classification Research Group Bulletin no. 6,"

J. Doc., v. 17, no. 3 (Sept. 1961), pp. 156-172.

"Classification Research Group Bulletin no. 7,"

J. Doc., v. 18, no. 2 (June 1962), pp. 65-88.

Foskett, D. J. "The Classification Research Group,"

Libri, v. 12, no. 2 (1962), pp. 127-138.

"Classification Research Group Bulletin no. 8,"

J. Doc., v. 20, no. 3 (Sept. 1964), pp. 146-169.

"Classification Research Group Bulletin no. 9,"

J. Doc., v. 24, no. 4 (Dec. 1968), pp. 273-298.

c) Faceted other than Classification Research Group types

Herschman, A. and others, A faceted classification scheme for physics (New York, American Institute of Physics, 1967), 371.

Faceting based on a three dimensional approach.

iv. Other

Kyle, Barbara, "E. G. Brisch: something new in classification," Special Libraries, v. 47 (1956), pp. 100-105.

Aitchison, Jean, Alan Campbell and Ralph Ireland, comps.

Thesaurofacet: a thesaurus & faceted classification for engineering & related subjects. (Whetstone, Leicester, The English Electric Company, Ltd., 1969).

III. Types of non-bibliographic classification

Practically every discipline has its own way of organizing its field. In most cases the classification used can be determined from the list given in the major abstracting journals for that field. These listings vary from year to year as the field changes. The following are three samples of different types: detailed, polyglot and contemporary.

Simpson, George Gaylord. The principles of classification and a classification of mammals (New York, American Museum of Natural History, 1945) (Its Bulletin, no. 85).

Bureau de recherches géologiques et minières. Service d'information géologique. Codification des fichiers bibliographiques. Codification of bibliographical card-index...(Paris, Service d'information géologique de B.R.G.G.M., 1959).

(Mathematical classification used by the American Mathematical Society)
Mathematical Reviews, first issue each year.

IV. Recent views of classification

For a general overview of the field, the first two of the following should be read cover to cover. During the course of reading the following questions should be borne in mind: (1) which of the "conclusions and recommendations" of the first conference have been fulfilled? (2) have any of the conclusions and recommendations of the second conference been fulfilled?

Proceedings of the International Study Conference on Classification for Information Retrieval held at Beatrice Webb House, Dorking, England, 13th-17th May, 1957 (London, ASLIB, 1957).

Classification research; proceedings of the Second International Study Conference held at Hotel Prins Hamlet, Elsinore, Denmark, 14th to 18th September 1964 (Copenhagen, Munksgaard, 1965).

Farradane, J.E.L., "Analysis and organization of knowledge for retrieval," ASLIB Proceedings, v. 22, no. 12 (Dec. 1970), pp. 607-615.

A. Criticism and goals

Shera, Jesse H. "What lies ahead in classification," Libraries and the organization of knowledge, pp. 129-142. Originally published in The role of classification in the modern American library; papers presented at an Institute conducted by the University of Illinois Graduate School of Library Science November 1-4, 1959 (Champaign, Ill., Illini Union Bookstore, 1959), pp. 116-128.

_____ "The dignity and advancement of Bacon," Libraries and the organization of knowledge, pp. 129-142. Originally published in College and Research Libraries, v. 23 (Jan. 1962), pp. 18-23.

The Library Association. Some problems of a general classification scheme; report of a conference held in London, June 1963 (London, Library Association, 1964).

Compare the "final statement" with those of the Dorking and Elsinore conferences. This report is also in the

Classification Research Group's Classification and Information Control (Library Association Research Publication No. 1).

The Sayers memorial volume; essays in librarianship in memory of

William Charles Berwick Sayers. ed. D. J. Foskett and B. I.

Palmer (London, The Library Association). essays:

Ranganathan, S. R. "Library classification on the march,"

pp. 72-95.

Farrandane, J. "Fundamental fallacies and new needs in classi-

fication," pp. 120-135.

Foskett, D. J. "Classification and integrative levels,"

pp. 136-150.

Palmer, B. I. "Classification as a foundation study for

librarians," pp. 202-212.

Palmer, Bernard I. Itself an education; six lectures in classification (London, Library Association, 1962).

Especially chapters 3, 4, 5.

Richmond, P. A. "Transformation and organization of information

content: aspects of recent research in the art and science

of classification," Proceedings of the FID Congress 1965,

pp. 87-106.

B. Purpose and method

American Library Association. Resources and Technical Services Division. Cataloging and Classification Section. Classification Committee. "Statement on types of classification avail-

able to new academic libraries," LRTS, v. 9, no. 1
(winter 1965), pp. 104-111.

Pragmatic approach.

[Criticism and commentary on above] LRTS, v. 9, no. 4 (fall,
1965), pp. 392-416.

Bry, Ilse and Lois Afflerbach, "Editorial: In search of an
organizing principle for the behavioral science literature,"
Mental Health Book Review Index, v. 10 (1965), pp. i-vii.

C. Eclecticism: some ideas adopted by various classificationists

1. Integrative levels

Feibleman, James K. "Theory of integrative levels," British
Journal for the Philosophy of Science, v. 5, no. 1 (May
1954), pp. 59-66.

Needham, Joseph. "Integrative levels: a revaluation of the
idea of progress," in his Time, the refreshing river
(Essays and addresses, 1931-42) (London, Allen & Unwin,
1943).

11. General systems theory

Toda, Masanao and Emir H. Shuford, Jr. "Logic of systems:
introduction to a formal theory of structure," General
Systems; yearbook of the Society for General Systems
Research, v. 10 (1965), pp. 3-27.

Scur, G. S. "Some considerations on the notion of invariant
field in linguistics," General Systems, v. 10 (1965),
pp. 97-105.

Distinction between relations and connections.

Maruyama, Magoroh. "Metaorganization of information,"

General Systems, v. 11 (1966), pp. 55-60.

Distinction between universes of classification,
relation and relevance.

Caws, Peter. "Science and system: on the unity and diversity
of scientific theory," General Systems, v. 13 (1968),
pp. 3-12.

Lindheim, Roslyn. "Uncoupling spatial systems," General
Systems, v. 13 (1968), pp. 99-103.

On systems analysis.

Wilson, Donna. "Forms of hierarchy: a selected bibliography,"
General Systems, v. 14 (1969), pp. 3-15.

Interesting philosophical discussion. Read with
care as there are many good ideas for research here.

Meier, Richard L. "Information input overload: features of
growth in communications-oriented institutions," Libri,
v. 13, no. 1 (1963), pp. 1-44.

Very important for classification as input.

iii. Other

Annual Review of Information Science and Technology.

"Content analysis, specification and control"

v. 1, ch. 4, 1966 (Baxendale)

v. 2, ch. 4, 1967 (Sharp)

v. 3, ch. 4, 1968 (Taulbee)

v. 4, ch. 3, 1969 (Fairthorne)

"Document description and representation"

v. 5, ch. 6, 1970 (Artandi)

The 1969 review by Fairthorne is especially pertinent.

INTREX: Report of a Planning Conference on Information

Transfer Experiments, September 3, 1965, ed. Carl

F. J. Overhage and R. Joyce Harman (Cambridge, Mass., MIT Press, 1965).

D. Toward a philosophy of classification

Shera, Jesse H. Libraries and the organization of knowledge,

ch. 7, 8, 9.

(Some of these cited above in their original place of publication, cf. IIA, IV, IVA).

Documentation Research and Training Centre. Annual Seminar, 4,

1966: The universe of knowledge, its structure and development (Bangalore, DTRC, 1966), papers A (Richmond), B (teNuyt) and C (Ranganathan).

Neelameghan, A. "Research on the structure and development of the universe of subjects," Library Science, v. 4, 1967, pp. 336-355.

Shera, Jesse H. "An epistemological foundation for library science,"

Foundations of access to knowledge: a symposium, ed. Edward B. Montgomery (Syracuse, N. Y., Syracuse University, 1968), pp. 7-25.

V. Subjects related to classification

A. Notation

Vickery, B. C. "Notational symbols in classification,"

J. Doc., v. 8 (1952), pp. 14-32; v. 12 (1956), pp. 73-87;

v. 13 (1957), pp. 72-77; v. 14 (1958), pp. 1-11; v. 15 (1959),
pp. 12-16.

Daily, Jay E. "A notation for subject retrieval files,"

Amer. Doc., v. 7 (1956), pp. 210-214.

Coates, E. J. "Notation in classification," Dorking papers,
pp. 51-64.

Richmond, P. A. "A simple mnemonic large-base number system

for notational purposes," J. Doc., v. 14 (1958), pp. 208-211.

Ranganathan, S. R. and M. A. Gopinath. "Development in the use
of digits in Colon classification," Library Science, v. 6,
no. 1 (1969), pp. 1-39.

Rather thorough discussion of notation as employed in
the Colon classification (the reader should be familiar
with the Colon system, cf. Rutgers lecture by Ranganathan,
before beginning this).

Foskett, A. C. The subject approach to information (Hamden,
Conn., Archon Books, 1969), pp. 89-110.

B. Linguistic approaches: terminology, language, linguistics, content analysis, stylistics

Singer, T.E.R. "The need for imagination and skepticism in making
literature searches," Record of Chemical Progress, v. 18 (1957),
pp. 11-29 (esp. pp. 27-28).

Chomsky, Noam. "Logical structures in language," Amer. Doc.,
v. 8 (1957), pp. 284-291.

Annual Review of Information Science and Technology, "Automated
Language Processing"

v. 1, ch. 6, 1966 (Simmons)

v. 2, ch. 6, 1967 (Bobrow and others)

v. 3, ch. 6, 1968 (Salton)

v. 4, ch. 5, 1969 (Montgomery)

Automated language processing. ed. Harold Borko (New York,
Wiley, 1967).

See especially the chapters on mathematical models
in linguistics and language processing, stylistic
analysis, syntactic theories.

Garvin, Paul. "The definitional model of language," "A linguist's
view of language-data processing," "Linguistics, data process-
ing, and mathematics," in Natural Language and the Computer.
ed. Paul L. Garvin (New York, McGraw-Hill, 1963), pp. 3-22,
109-127, 357-369.

Sedelow, Sally Yeates and Walter A. Sedelow, Jr. "Categories and
procedures of content analysis in the humanities," The analysis
of communication content; developments in scientific theories
and computer techniques. ed. George Gerbner and others.
(New York, Wiley, 1969), pp. 487-499.

Kučera, H. and Nelson Francis. Computational analysis of present-
day American English (Providence, Brown University Press, 1967).

Hines, Theodore C., Jessica L. Harris and Charlotte L. Levy.

"An experimental concordance program," Computers and the Humanities, v. 4, no. 3 (Jan. 1970), pp. 161-171.

Moyne, J. A. "Information retrieval and natural language,"

Proceedings of the American Society for Information Science,
volume 6: Cooperating information societies, ed. Jeanne B.
North. 32nd Annual meeting, San Francisco, California,
October 1-4, 1969 (Westport, Conn., Greenwood Publishing
Corp., 1969), pp. 259-263.

Most of the linguistic approaches so far have been
relatively unproductive because not enough is known
of language processes themselves. This article dis-
cusses the ambiguity problem caused by the semantics
stumbling-block.

C. The subject approach, including latent structures in indexing

1. Subject headings, descriptors, index terms

Pettee, Julia. Subject headings: the history and theory
of the alphabetical subject approach to books (N.Y.,
H. W. Wilson, 1946), pp. 3-4, 57-60, 73-80.

Prevost, Marie Louise. "An approach to theory and method
in general subject heading," Lib. Quart., v. 16 (1946),
pp. 140-151.

Vickery, B. C. "The structure of a connective index,"
J. Doc., v. 6 (1950), pp. 140-151.

_____ "Systematic subject indexing," J. Doc., v. 9
(1953), pp. 48-57.

Scheerer, George. "The subject catalog examined," Lib.

Quart., v. 27 (1957), pp. 187-198.

Richmond, P. A., "Cats: an example of concealed classifica-

tion in subject headings," Library Resources and

Technical Services, v. 3 (1959), pp. 102-112.

Coates, E. J. Subject catalogues: headings and structure

(London, The Library Association, 1960).

Not limited to conventional subject heading

approach.

Foskett, A. C. The subject approach to information

(Hamden, Conn., Archon Books, 1969), pp. 54-88,

122-219.

Austin, Derek and Peter Butcher. PRECIS a Rotated Subject

Indexing System (London, Council of the BNB, 1969)

+ Supplement.

An automated depth indexing based on a classifi-

cation approach. Advanced.

Schachtman, Bella E. "Subject indexing mythology," LRTS,

v. 8, no. 5 (1964), pp. 236-248.

Dolby, James L. "The structure of indexing; the distribu-

tion of structure-word-free back-of-the-book entries,"

Proceedings of the American Society for Information

Science, Annual Meeting, volume 5: Information transfer,

Columbus, Ohio October 20-24, 1968 (New York, Greenwood

Publishing Corp., 1968), pp. 65-72.

Coates, E. J. "Switching languages for indexing," J. Doc.,

v. 26, no. 2 (June 1970), pp. 102-119.

11. Thesauri

London, Gertrude. A classified thesaurus as an aid to indexing, classifying and searching. Report for the Period July 1965-July 1966 (New Brunswick, N. J., Rutgers Univ., 1966).

Mulvihill, J. C. and E. H. Brenner. "Faceted organization of a thesaurus vocabulary." Progress in information science and technology: proceedings of the American Documentation Institute 1966 annual meeting, October 3-7, 1966, Santa Monica California (Santa Monica, Adrienne Press, 1966), pp. 175-183.

Dym, Eleanor D. "A new approach to the development of a technical thesaurus." Proceedings of the American Documentation Institute, Annual meeting volume 4: Levels of interaction between man and information, New York, New York, October 22-27, 1967 (Washington, Thompson Book Co., 1967), pp. 126-131.

Martinez, Samuel J. and Donald P. Helander. "The development and maintenance of a specialized, controlled vocabulary thesaurus." Proceedings of the American Society for Information Science, Annual meeting volume 5: Information transfer, Columbus, Ohio, October 20-24, 1968 (New York, Greenwood Publ. Corp., 1968), pp. 279-283.

Mandersloot, Wim G. B., Eleanor M. B. Douglas and Neville Spicer. "Thesaurus control - the selection, grouping and cross-referencing of terms for inclusion in a

coordinate index word list," JASIS, v. 21, no. 1 (Jan./Feb. 1970), pp. 49-57.

It is advisable to look at as many thesauri as possible, noting the gradual introduction of classification features in one guise or another.

D. The classified catalog

Shera, Jesse H. and Margaret E. Egan. The classified catalog; basic principles and practices (Chicago, American Library Association, 1956), pp. 65-103.

E. Automatic indexing and classification

Stevens, Mary Elizabeth. Automatic indexing; a state of the art report (Washington, Government Printing Office, 1965) (National Bureau of Standards Monograph 91).

To get the feel of this field, it is suggested that the work of M. E. Maron, "Automatic Indexing: an experimental inquiry," Harold Berko, "Automatic document classification," and John H. Williams, Jr., "Results of classifying documents with multiple discriminant functions" (or equivalent) be read in the original.

Dattola, R. T. "A fast algorithm for automatic classification," Journal of Library Automation, v. 2, no. 1 (Mar. 1969), pp. 31-48.

Augustson, J. Gary and Jack Minker. "Deriving term relations for a corpus by graph theoretical clusters," JASIS, v. 21, no. 2 (Mar./Apr. 1970), pp. 101-111.

The two articles above describe clumping and clustering procedures. The references in the footnotes should be read by those desiring further information about these and similar methodologies.

Salton, Gerard. Automatic information organisation and retrieval (New York, Wiley, 1968).

Advanced. Some input methods of interest in classification.

Sparck Jones, Karen. "Some thoughts on classification for retrieval," J. Doc., v. 26, no. 2 (June 1970), pp. 89-101.

Helpful commentary by one of the leaders in the field.

Automatic keyword classification for information retrieval (Hamden, Conn., Archon Books, 1971).

Advanced. The bibliography in this book leads into much of the significant work of this type.

F. Automation of classification procedures and results

No system yet performs the human part of classification in a fully satisfactory manner, but there are several interesting developments involving automation of either the schedules of the classification numbers, or the process of classifying documents with an existing system of some kind.

1. Input (as part of catalog automation)

Curran, Ann T. and Henriette D. Avram. The identification of data elements in bibliographic records...
(New York, United States of America Standards Institute, 1967).

MARC manuals used by the Library of Congress; prepared by the Information Systems Office, Library of Congress (Chicago, Information Science and Automation Division, American Library Association, 1969); 2d ed. (American Library Association, 1970).

Austin, Derek. "An information retrieval language for MARC," ASLIB Proceedings, v. 22, no. 10 (Oct. 1970), pp. 481-491.

ii. Input/output (as a system of subject analysis)

File organization and search strategy using the Universal Decimal Classification in mechanized reference retrieval systems; paper presented at the F.I.D./I.F.I.P. Conference on Mechanized Information Storage, Retrieval, and Dissemination, Rome, June 15, 1967 (New York, American Institute of Physics, 1967) (UDC Project Report no. AIP/UDC-5).

VI. Miscellaneous background material

A. Scientific method, philosophy

Black, Max. Critical thinking; an introduction to logic and scientific method, 2d ed. (N.Y., Prentice-Hall, 1952).

Lockemann, Georg. "The varieties of scientific discovery," Journal of Chemical Education, v. 36 (1959), pp. 220-224 (trans. by Ralph E. Oesper).

Smith, Julian. "Literature's buried treasures; burials and resurrections in chemistry," Amer. Doc., v. 6 (1955), pp. 86-88.

Heumann, Karl F. "Notes on negative data," Amer. Doc., v. 7 (1956), pp. 36-39.

Walls, Gordon L. "The G. Palmer story (or, what it's like, sometimes, to be a scientist)," Journal of the History of Medicine and Allied Sciences, v. 9 (1956), pp. 66-96.

Barker, Stephen F. Philosophy of mathematics (Englewood Cliffs, N. J., Prentice-Hall, 1964).

Toulmin, Stephen. The Philosophy of Science, an Introduction (New York, Harper & Row, 1960).

B. Information science (née documentation)

Fairthorne, Robert A. Towards information retrieval (London, Butterworths, 1961).

Vickery, Brian C. On retrieval system theory (London, Butterworths, 1961).

"Information," Scientific American, v. 215, no. 3 (Sept. 1966).

Indicative of the breadth of the field.

Fleisher, Harold. "An introduction to the theory of information," Lib. Quart., v. 25 (1955), pp. 327-332.

Shaw, Ralph R. "Documentation: complete cycle of information service," College & Research Libraries, v. 18 (1957), pp. 452-454.

Goffman, William. "Information science: discipline or disappearance," ASLIB Proceedings, v. 22, no. 12 (Dec. 1970), pp. 589-595.

Foskett, D. J. "Progress in documentation: 'Informatics',"

J. Doc., v. 26, no. 4 (Dec. 1970), pp. 340-369.

A major thought-provoking contribution.

Ladendorf, Janice. "Information flow in science, technology and commerce," Special Libraries, v. 61, no. 5 (May/June 1970), pp. 215-222.

Methods of communication--how, why. Very clearly written.

C. Cataloging codes

Anglo-American cataloging rules. North American Text (Chicago, American Library Association, 1967); British Text (London, Library Association, 1967).

Field, F. Bernice. "The new catalog code: the general principles and major changes," LRTS, v. 10, no. 4 (fall 1966), pp. 421-436.

New rules for an old game; proceedings of a workshop on the 1967

Anglo-American cataloguing code held by the School of Librarianship, The University of British Columbia, April 13 and 14, 1967 (Vancouver, University of British Columbia, 1967).

Dunkin, Paul S. Cataloging USA (Chicago, American Library Association, 1969), chapters 2, 5 and 6.

Emphasizes "why" rather than "what."

D. Logic

Copi, Irving M. Symbolic logic (New York, Macmillan, 1934).

Hoyle, W. G. "On the number of categories for classification," Information Storage and Retrieval, v. 5 (June 1969), pp. 1-6.

Salmon, Wesley C. Logic (Englewood Cliffs, N. J., Prentice-Hall, 1963).

Ayer, A. J. "Chance," Scientific American, v. 213 (Oct. 1965), pp. 44-54.

E. Statistical methods

Statistical methods for mechanized documentation; symposium proceedings, Washington 1964, ed. Mary Elizabeth Stevens, Vincent Giuliano and Laurence B. Heilprin (Washington, Govt. Print. Off., 1965) (National Bureau of Standards Miscellaneous Publication 269).

F. System analysis

There are a number of books on this subject, both from the library point of view and in general. While the subject is important and at least some sampling should be made of what is available to be read, it should be remembered that a system can be analysed to death without achieving much insight into what should occur.

Becker, Joseph. "System analysis - prelude to library data processing," ALA Bulletin, v. 59 (April 1965), pp. 293-296.
Brief introduction.

Dougherty, Richard M. and Fred J. Heinrits, Scientific management of library operations (New York, Scarecrow Press, 1966),
Library orientation.

G. Communication theory, symbolism

Cherry, Colin. On human communication, a review, a survey and a criticism, 2d ed. (Cambridge, Mass., MIT Press, 1966).

This is available also in paperback and is strongly recommended for an overall survey.

Pierce, John R. Symbols, signals and noise: the nature and process of communication (New York, Harper, 1961).

Available in paperback.

Langer, Suzanne. Philosophy in a new key: a study in the symbolism of reason, rite and art (New York, Mentor Books, 1951). Chapters 1-5, 10. Originally published in 1942.

Interesting arguments and penetrating criticism.

Psychology and the symbol: an interdisciplinary symposium, ed.

Joseph R. Royce (New York, Random House, 1965).

Has sections of interest to classification.

Alston, William P. Philosophy of language (Englewood Cliffs, N. J., Prentice-Hall, 1964).

H. Evaluation

A tremendous amount of material appeared on this subject in the 1960's. The appropriate chapters in the Annual review of information science and technology and the proceedings of the American Society for Information Science will give summaries and lead into further reading.

Henderson, Madeline M. Evaluation of information systems: a selected bibliography with informative abstracts (Washington,

Govt. Print. Off., 1967) (National Bureau of Standards
Technical note 297).

Saracevic, Tefko. Comparative Systems Laboratory final technical
report: an inquiry into testing of information retrieval
systems (Cleveland, Ohio, Case Western Reserve University,
1968), pt. 1-2.

Meetham, A. R. "Communication theory and the evaluation of in-
formation retrieval systems," Information Storage and
Retrieval, v. 5 (1969), pp. 129-134.

Note meaning of word "information" used here.

Rothenberg, Douglas H. "An efficiency model and a performance
function for an information retrieval system," Information
Storage and Retrieval, v. 5 (1969), pp. 109-122.

I. Computers and computer programming

Crowley, Thomas H. Understanding computers (New York, McGraw-
Hill, 1967).

For beginners.

Artandi, Susan. An introduction to computers in information
science (Metuchen, N. J., Scarecrow Press, 1968).

For beginners. Subject approach.

Sammet, Jean E. Programming languages: history and fundamentals
(Englewood Cliffs, N. J., Prentice-Hall, 1969).

Essentially a reference work, but has good intro-
ductory material.

Crawford, F. F. Introduction to data processing (Englewood
Cliffs, N. J., Prentice-Hall, 1968).

Thorough.

Bates, Frank and Mary L. Douglas. Programming language/one
(Englewood Cliffs, N. J., Prentice-Hall, 1967).

A clear text.

J. Surveys, the future

Sicking, L.M.C.J. and B. V. de G. Walden. Automatic literature processing (Amsterdam, IAG, 1968) (IAG-occasional publications, nr. 2).

Overview from European angle.

Vosper, Robert G. "Libraries and the inquiring mind," ALA Bulletin, v. 59 (Sept. 1965), pp. 709-717.

Licklider, J.C.R. Libraries of the future (Cambridge, Mass., MIT Press, 1965).

Oriented toward science and technology.

K. Library automation

East, Harry. "Current research in mechanization," ASLIB Proceedings, v. 22, no. 12 (Dec. 1970), pp. 617-627.